Hybridization

SiF_4 Bank é's = 4 + 28 = 32 e's

32 − 8 + 24 = 32 → 0 left

tetrahedral 109.5°

Si: $3s^2 3p^2$

F: $2s^2 2p^5$

Si: Ground 3s 3p

Si excited: 3s 3p

Si hybridized: sp^3

4 bonds ∴ 4 hybrid orb. h

s + p + p + p

sp^3

XeF_4 Bank = 8 + 7(4) = 36

36 − 24 + 8 = 32 → 4

Xe: 5s 5p

Xe excited: 5s 5p 5d

Xe hybrid: sp^3d^2

Molecular shape: Square planar (<) 90°

Hybridization: 4 bonds, 2 Lone pairs

6 hybrid orbitals

s + p + p + p + d + d

sp^3d^2

3) SO_3^{2-}

Bank: 6 + 18 + 2 = 26

26 − 18 + 6 = 24 → 2

S has 6 valence é's ∴ one double bond is needed

trigonal pyramidal < 109.5°

sp^3

Resonance structure

S: 3s 3p

excited: 3s 3p 3d

hybridized: sp^3 3d

sp^3